

Section II (Remarks)

Information Disclosure Statement

In the January 15, 2008 Office Action, the examiner noted that various references listed in the Information Disclosure Statement of October 18, 2007 had not been furnished. Applicant by Information Disclosure Statement filed May 12, 2008 has furnished copies of such references, with the exception of Seisler, H.W., et al., Near Infrared Spectroscopy, 2002 (Wiley), a copy of which is being obtained and will be submitted upon its receipt.

Summary of Amendments to the Claims

Claims 1 and 22 have been amended herein.

In response to the examiner's indication that claims 22-36 would be allowable if rewritten to overcome the rejection under 35 USC 112, second paragraph, and to include all limitations of the base claim and any intervening claims, claim 22 has been rewritten in independent form, to recite, *inter alia*,

"22. A method for *in situ* galvanodynamic cleaning and depassivating a measuring electrode in a measuring chamber arranged for analyzing a sample metal plating solution, comprising the steps of:

- (a) providing an electrode assembly including said measuring electrode and an *in situ* cleaning mechanism for cleaning the measuring electrode in the measuring chamber, said *in situ* cleaning mechanism comprising an auxiliary electrode and an auxiliary current source connected to the auxiliary electrode, wherein the measuring electrode is detachably connectable to a measuring circuit and said auxiliary current source;
- (b) reattachably disconnecting the measuring electrode from the measuring circuit and detachably connecting the measuring electrode to the auxiliary current source;

....

- (d) using said auxiliary current source to apply a cycling electric current to the measuring electrode and the auxiliary electrode through said sample metal plating solution or electrolytic cleaning solution, for a sufficient period of time for *in situ* cleaning and depassivating the measuring electrode, with the cycling electric current being applied until electropotential measured by the measuring electrode reaches an asymptotic limit..."

thereby overcoming the 35 USC 112, second paragraph rejection and incorporating the applicable limitations of claim 1 therein.

Claim 1 has been amended herein to recite an electrode assembly, which when including an *in situ* cleaning mechanism comprising an auxiliary electrode and an auxiliary current source, for cleaning the measuring electrode in a measuring chamber, is subject to the requirement that

“the auxiliary current source is constructed and arranged to apply said cycling electric current to the measuring electrode and the auxiliary electrode until the electropotential measured by the measuring electrode reaches an asymptotic limit.”

By this recital, the auxiliary current source is structurally specified (as being "constructed and arranged") to apply cycling electric current only until the asymptotic limit of the measuring electrode electropotential is reached.

Rejection of Claims on Reference Grounds, and Traversal Thereof

In the January 15, 2008 Office Action, claims 1-17 have been rejected on reference grounds, including:

- a rejection of claims 1, 2 and 9-17 under 35 USC 102(b) as anticipated by Robertson US Patent 6,758,960;
- a rejection of claims 1-5, 7 and 9-17 under 35 USC 103(a) as unpatentable over Chang et al. US Patent 5,192,403 in view of Wullshleger US Patent 4,772,375;
- a rejection of claims 3-5 and 7 under 35 USC 103(a) as unpatentable over Robertson in view of Chang;
- a rejection of claims 6 and 8 under 35 USC 103(a) as unpatentable over Chang and Wullschleger, or Robertson and Chang, further in view of Faulkner et al. US Patent 3,950,234 or Tobiyama et al. US Patent 5,447,802; and
- a rejection of claims 9-17 under 35 USC 103(a) as unpatentable over Robertson.

These rejections are traversed in application to claims 1-17 as amended herein. Reconsideration of the patentability of such claims 1-17 is requested, in light of the ensuing remarks.

Patentable Distinction of Amended Claims 1-17

As indicated above, claim 1 has been amended to recite an electrode assembly that when configured to include an *in situ* cleaning mechanism comprising an auxiliary electrode and an auxiliary current source, for cleaning the measuring electrode in a measuring chamber, requires the auxiliary current source to be "constructed and arranged to apply said cycling electric current to the measuring electrode and the auxiliary electrode until the electropotential measured by the measuring electrode reaches an asymptotic limit."

No such electrode assembly is disclosed or has any derivative basis in the cited references. Although the Office Action has contended that the foregoing limitation is "only the intended use of the apparatus," such contention ignores the fact that applicants are structurally specifying the auxiliary current source as being "constructed and arranged" to apply cycling electric current to the measuring electrode and auxiliary electrode until the asymptotic limit of the measuring electrode electropotential is reached, and the auxiliary current source must therefore be "constructed and arranged" so that it ceases to apply cycling electric current to the measuring electrode and auxiliary electrode thereafter. Such "construction and arrangement" of the auxiliary current source therefore specifies an apparatus element as having requisite structural features for the specified operational capability of the apparatus.

Since none of Robertson, Chang, Wullschleger, Faulkner, or Tobiyama, singly or in any combination, discloses or provides any derivative basis for such auxiliary current source in such electrode assembly as specified in claim 1, and since none of these references either alone or in combination describes or provides any derivative basis for the nucleation and metal growth optimization mechanism or the voltage limiting mechanism alternatively specified in claim 1, claim 1, as well as claims 2-17 dependent thereunder, patently distinguishes over the cited references.

It therefore is requested that the rejections of claims 1-17 in the January 15, 2008 Office Action be withdrawn, and that such claims be allowed together with claims 22-36.

CONCLUSION

Based on the foregoing, all of Applicants' pending claims 1-17 and 22-36 are patentably distinguished over the art, and in form and condition for allowance. The examiner is requested to favorably consider the foregoing, and to responsively issue a Notice of Allowance. If any issues require further resolution, the examiner is requested to contact the undersigned attorney at (919) 419-9350 to discuss same.

Respectfully submitted,

/steven j. hultquist/

Steven J. Hultquist
Reg. No. 28,021
Attorney for Applicants

**INTELLECTUAL PROPERTY/
TECHNOLOGY LAW**
Phone: (919) 419-9350
Fax: (919) 419-9354
Attorney File No.: 2771-617

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